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| EXAMINER |
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BURGESS, BARBARA N

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| ART UNIT | PAPER NUMBER |
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2157

DATE MAILED: 10/01/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/347,034

Applicant(s)

ALBERT ET AL.

Examiner

Barbara N Burgess

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-85 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-85 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). 15.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to Request for Continuation Examination filed June 20, 2003. Claims 1-15 and 17-85 are presented for further examination. Claim 16 has been cancelled at the request of the applicant.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 3, 11, 17, 19, 36, 38-41, 47, 48-49, 57, 63, 65, 82, 84-85 are rejected under 35 U.S.C. 102(e) as being anticipated by Urano et al. (hereinafter "Urano", 6,434,616).

As per claims 1, 48, and 84, Urano discloses a method for providing a network service comprising:

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- Receiving instructions from a service manager at a forwarding agent, the instructions indicating how packets received by the forwarding agent are to be processed (column 3, lines 15-18);
- Processing the packets received at the forwarding agent according to the instructions (column 4, lines 36-48, 63-65);
- Forwarding selected packets from the forwarding agent to the service manager in response to the instructions, wherein the instructions provided by the service manager are associated with a selected one of a group consisting of:
 - A routing operation;
 - A statistics gathering operation;
 - A load balancing operation;
 - A packet modification operation;
 - A tunneling operation;
 - A tag switching operation (column 4, lines 35-48, 57-65, column 5, lines 19-21, 25-26, 39-44, 59-67, column 6, lines 1-4, 42-47, 59-67).

As per claims 3, 17, 19, 36, 49, 63, 65, 82, 85, Urano discloses a method for providing a network service, comprising:

- Receiving packet interest instructions from a service manager at a forwarding agent, the instructions specifying packets that the forwarding agent is to communicate to the service manager (column 4, lines 36-39, 43-45);

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- receiving an initial packet at a forwarding agent that matches one of the packets specified in the packet interest instructions from the service manager (column 3, lines 22-28, column 4, lines 11-14);
- Communicating the initial packet from the forwarding agent to the service manager so that the packet may be processed at the service manager to determine one or more actions that are to be performed for the packet, wherein the instructions provided by the service manager are associated with a selected one of a group consisting of:

A routing operation;

A statistics gathering operation;

A load balancing operation;

A packet modification operation;

A tunneling operation;

A tag switching operation (column 4, lines 35-48, 57-65, column 5, lines 19-21, 25-26, 39-44, 59-67, column 6, lines 1-4, 42-47, 59-67).

As per claims 11 and 57, Urano discloses the method of claim 3, further comprising:

- Forwarding the packet from the service manager to a destination other than the forwarding agent, the destination being determined by the service manager (column 4, lines 53, 63-64).

As per claim 38, Urano discloses:

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- a service manager receiving interface for receiving instructions from a service manager specifying actions to be performed for server designated packets (column 3, lines 15-18);
- a service manager sending interface for sending packets to the service manager (column 4, lines 63-64, column 5, lines 19-21, 25-26);
- A network packet receiving interface for receiving internet protocol (IP) packets from a network (column 3, lines 22-28, column 4, lines 11-14);
- a network packet forwarding interface for forwarding IP packets to the network (column 4, lines 63-64, column 5, lines 19-21, 25-26);
- A processor for performing the specified actions on the server designated packets wherein the instructions provided by the service manager are associated with a selected one of a group consisting of:
 - A routing operation;
 - A statistics gathering operation;
 - A load balancing operation;
 - A packet modification operation;
 - A tunneling operation;
 - A tag switching operation (column 4, lines 35-48, 57-65, column 5, lines 19-21, 25-26, 39-44, 59-67, column 6, lines 1-4, 42-47, 59-67).

As per claim 39, Urano discloses:

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- Service manager instruction storage element for storing the service manager instructions (column 3, lines 24-28).

As per claim 40, Urano discloses:

- Service manager instruction storage element includes a general instruction storage that stores criteria for forwarding packets to the service manager and a specific instruction storage that stores specific instructions for handling the server designated packets (column 3, lines 24-28).

As per claim 41, Urano discloses:

- a comparator for comparing portions of newly received packets to the stored criteria (column 3, lines 22-28, column 4, lines 11-14).

As per claim 47, Urano discloses:

- the service manager receiving interface and the network packet receiving interface are the same interface (column 3, lines 30-32).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2, 16, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of Arai.

As per claim 2, Urano does not explicitly disclose the forwarding agent forwards the selected packets to the service manager using UDP. However, the use and advantages for using this protocol is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Arai (column 12, lines 3-7).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate using UDP in Urano's method allowing a direct way to send information over a network.

5. Claims 4, 6, 10, 16, 50, 52, 56, 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of Kawagoe et al. (hereinafter "Kawagoe", 5,961,595).

As per claims 4 and 50, Urano does not explicitly disclose receiving packet handling instructions from the service manager at the forwarding agent that include the actions determined by the service manager for the packet. However, in an analogous art, Kawagoe discloses the agent modifying data as a result the operation request issued by the manager (column 6, lines 25-39).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate receiving packet handling instructions

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in Urano's method in order for the agent to determine the necessity of modifying the managed instance or send the data, as is, to the requesting manager.

As per claims 6 and 52, Urano discloses:

- Receiving the initial packet from the service manager at the forwarding agent along with the packet handling instructions (column 4, lines 36-39, 43-45);
- Handling the packet at the forwarding agent according to the packet handling instructions (column 4, lines 63-64, column 5, lines 19-21, 25-26).

As per claims 10 and 56, Urano discloses:

- receiving a subsequent packet at the forwarding agent (column 4, lines 36-39, 43-45);
- determining that the subsequent packet matches a criteria included in the packet handling instructions (column 3, lines 22-28, column 4, lines 11-14);
- Handling the subsequent packet at the forwarding agent according to the packet handling instructions (column 4, lines 63-64, column 5, lines 19-21, 25-26).

6. Claims 12, 34-35, 37, 58, 80-81, 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of DeNap et al. (hereinafter "DeNap", 6,407,997).

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Urano does not explicitly disclose forwarding the packet from the service manager to a destination other than the forwarding agent includes translating the destination IP address in the packet. However, the use and advantages for translating the IP address is well known to one skilled in the relevant art at the time the invention was made as evidenced by DeNap (column 9, lines 27-29).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate translating the IP address in Urano's method in order for packets to be forwarded to a destination different from the destination IP address originally stored in the packet header.

7. Claims 13 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of Furuichi.

Urano does not explicitly disclose forwarding the packet from the service manager to a destination other than the forwarding agent includes communicating the packet to the destination using tag switching. However, in an analogous art, Furuichi discloses the use of tag switching as a way of sending packets to a specified destination (column 1, lines 23, 30-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate tag switching in Urano's method in order for packets to cut through the switch so that packets bypass the controller and travel at hardware speed.

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8. Claims 14 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of Blahut et al. (hereinafter "Blahut", 6,065,061).

Urano does not explicitly disclose forwarding the packet from the service manager to a destination other than the forwarding agent includes communicating the packet to the destination using IP tunneling. However, in an analogous art, Blahut discloses the use of IP tunneling (column 5, lines 12-16).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the use of IP tunneling in Urano's method in order to reroute any downstream traffic to a specific destination.

9. Claims 15, 43, and 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of Kimball et al. (hereinafter "Kimball", US 2002/0126622).

Urano does not explicitly disclose the forwarding agent is implemented on a selected one of a group consisting of a switch, a load balancer, and a router. However, the use and advantages for implementing an agent on a router is well known to one skilled in the relevant art at the time the invention was made as evidenced by Kimball (paragraph [0035]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement a router, switch, and load balancer agent in

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Urano's method in order to track the events that occur during router execution and allow the agent to send alerts when an error is detected.

10. Claims 18 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of Subramaniam et al. (hereinafter "Subramaniam", 6,070,187).

Urano does not explicitly disclose receiving unicast packet handling instructions from the service manager at the forwarding agent that include the actions determined by the service manager for the packet. However, in an analogous art, Subramaniam discloses a unicast packet received by a specific node (column 3, lines 57-60).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the use of a unicast packet handling instruction in Urano's method in order for a specific agent to take action on a packet according to the request of the service manager.

11. Claims 20 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of Arai.

Urano does not explicitly disclose specifying packets that the forwarding agent is instructed to communicate to the service manager includes receiving a UDP packet at the forwarding agent. However, the use and advantages for using this protocol is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Arai (column 12, lines 3-7).

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Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate using UDP in Urano's method allowing a direct way to send information over a network.

12. Claims 21-33, 42, 44-46, 67-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view of Flanders et al. (hereinafter "Flanders", 6,172,980).

As per claims 21, 42, 45, 67, Urano does not explicitly disclose receiving packet interest instructions from the service manager at a forwarding agent includes receiving a wildcard affinity at the forwarding agent that identifies one or more flows to be received by the forwarding agent. However, in an analogous art, Flanders teaches packets having flow (wildcard affinity) ID's with associated quality of service parameters (column 6, lines 62-67, column 7, lines 1-2).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the use of wildcard affinity in Urano's method in order for a packet to be transmitted according to specific quality of service parameters set forth by the service manager.

As per claims 22, 24-31, 44, 46, 68, 70-77, Urano does not explicitly disclose the wildcard affinity include a selected one or more of a group consisting of: source IP address(es), a destination IP address(es), a source port number(s) and a destination port number(s). However, in an analogous art, Flanders teaches these IP address and

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port numbers (column 3, lines 58-59, column 5, lines 17-18, column 16, lines 24-25, column 10, lines 16-17).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate wildcard affinity including a source IP address, a destination IP address, a source port number and a destination port number in Urano's method allowing the agent to determine where the packet should be sent according to the wildcard affinity.

As per claims 23 and 69, Urano does not explicitly disclose the wildcard affinity includes a protocol identifier. However, in an analogous art, Flanders teaches the use of a protocol identifier (column 10, lines 16-17).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate wildcard affinity including a protocol identifier in Urano's method in order for the agent to determine the protocol under which the wildcard affinity was transmitted and the protocol in which to send the packets received.

As per claims 32-33 and 78-79, Urano does not explicitly disclose the use of a netmask element when specifying IP addresses. However, in an analogous art, Flanders teaches the use of a mask (column 7, lines 52-54).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the use of netmasks in Urano's method in order to filter out certain IP addresses.

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13. Claims 5 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view Kawagoe et al. (hereinafter "Kawagoe", 5,961,595) and in further view of Arai.

As per claims 5 and 51, Urano, in view of Kawagoe, does not explicitly disclose the receiving packet handling instructions from the service manager at the forwarding agent that include the actions determined by the service manager for the packet includes receiving a user datagram protocol (UDP) packet at the forwarding agent. However, the use and advantages for using this protocol is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Arai (column 12, lines 3-7).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate using UDP in Urano's method allowing a direct way to send information over a network.

14. Claims 7 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view Kawagoe et al. (hereinafter "Kawagoe", 5,961,595) and in further view of DeNap et al. (hereinafter "DeNap", 6,407,997).

As per claims 7 and 53, Urano, in view of Kawagoe does not explicitly disclose handling the packet at the forwarding agent according to the packet handling instructions includes translating the destination internet protocol (IP) address in the packet so that the packet is forwarded to a different IP address than the IP address

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originally included in a packet header. However, the use and advantages for translating the IP address is well known to one skilled in the relevant art at the time the invention was made as evidenced by DeNap (column 9, lines 27-29).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate translating the IP address in Urano's method in order for packets to be forwarded to a destination different from the destination IP address originally stored in the packet header.

15. Claims 8 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view Kawagoe et al. (hereinafter "Kawagoe", 5,961,595) and in further view of Furuichi.

As per claims 8 and 54, Urano, in view of Kawagoe, does not explicitly disclose handling the packet at the forwarding agent according to the packet handling instructions includes communicating the packet to a destination specified in the packet handling instructions using tag switching. However, in an analogous art, Furuichi discloses the use of tag switching as a way of sending packets to a specified destination (column 1, lines 23, 30-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate tag switching in Urano's method in order for packets to cut through the switch so that packets bypass the controller and travel at hardware speed.

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16. Claims 9 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. (hereinafter "Urano", 6,434,616) in view Kawagoe et al. (hereinafter "Kawagoe", 5,961,595) and in further view of Blahut et al. (hereinafter "Blahut", 6,065,061).

As per claims 9 and 55, Urano, in view of Kawagoe, does not explicitly disclose handling the packet at the forwarding agent according to the packet handling instructions includes communicating the packet to a destination specified in the packet handling using IP tunneling. However, in an analogous art, Blahut discloses the use of IP tunneling (column 5, lines 12-16).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the use of IP tunneling in Urano's method in order to reroute any downstream traffic to a specific destination.

Response to Arguments

The Office notes the following arguments:

(a) The examiner had previously made a series of rejections based on a number of references. However, these references are no longer germane to the patentability of the pending claims. This is a result of the discussion involving Examiner Burgess: the discussion evaluating the applicability and appropriateness of such references.

Applicant submits that claims 1-15 and 17-85 are patentably distinct from each of them as resolved by attorneys for applicant and examiner in the telephone interview identified.

In response to:

(a) Applicant's arguments filed have been fully considered but they are not persuasive.

As for the telephone interview between applicant's attorney and examiner, the examiner does not recall any agreements made to the distinctiveness of the claims to the references used. There was no resolution made that claims 1-15 and 17-85 are patentably distinct from the references. The references are appropriate and relevant to the claimed invention as set out in this office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Ettinene can be reached on (703) 308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess
Examiner
Art Unit 2157

September 21, 2003


ARIO ETTINENE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100